



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,484	09/28/2001	Bruce M. Radl	13076-002001	6457
26161	7590	05/05/2004	EXAMINER	
FISH & RICHARDSON PC 225 FRANKLIN ST BOSTON, MA 02110			ROSENDALE, MATTHEW L	
			ART UNIT	PAPER NUMBER
			2612	
DATE MAILED: 05/05/2004				

12

Please find below and/or attached an Office communication concerning this application or proceeding.



UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS  
UNITED STATES PATENT AND TRADEMARK OFFICE  
P.O. Box 1450  
ALEXANDRIA, VA 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

MAILED  
MAY 05 2004  
Technology Center 2600

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Paper No. 12

Application Number: 09/966,484

Filing Date: September 28, 2001

Appellant(s): RADL, BRUCE M.

Charles Hieken  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 04/05/2004.

**(1) Real Party in Interest**

Art Unit: 2612

The brief does not contain a statement identifying the Real Party in Interest. Therefore, it is presumed that the party named in the caption of the brief is the Real Party in Interest, i.e., the owner at the time the brief was filed. The Board, however, may exercise its discretion to require an explicit statement as to the Real Party in Interest.

**(2) *Related Appeals and Interferences***

The brief does not contain a statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief. Therefore, it is presumed that there are none. The Board, however, may exercise its discretion to require an explicit statement as to the existence of any related appeals and interferences.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6)     *Issues***

The appellant's statement of the issues in the brief is correct

**(7)     *Grouping of Claims***

The rejection of claims 1-6, 8, and 9 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

**(8)     *ClaimsAppealed***

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9)     *Prior Art of Record***

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

4,654,698

LANGWORTHY

3-1987

**(10)    *Grounds of Rejection***

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1 – 6, 8, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Langworthy.

Referring to claim 1, Langworthy discloses an electro-optical apparatus in figure 13 comprising a lens 10, a CCD image sensor 20 having a pattern of color sensitive pixels, and a spectrally dispersive element comprising dichroic mirrors 72, 74, 76, and 78 between the lens 10 and CCD 20 (Col. 6, Lines 6 – 34).

2. Referring to claim 2, Langworthy discloses a Bayer filter pattern as shown in figure 14.

3. Referring to claim 3, Langworthy discloses an alternative embodiment where the color filter pattern is a tri-stripe shown in figures 7 and 8.

4. Referring to claim 4, Langworthy discloses color-sensitive pixels arranged in continuous groups having a red pixel and a blue pixel as shown in figure 14. The spectrally dispersive element 72, 74, 76, and 78, and the lens 10 shown in figure 13 are configured to focus a line image of an optical point by optically shifting object light upon a line of a group with the red end of the line within the red pixel and the blue end of the line within the blue pixel (Col. 6, Lines 6 – 34).

5. Referring to claim 5, Langworthy discloses a Bayer pattern shown in figure 14 having continuous 2x2 pixel groups having a red pixel adjacent to a first and second green pixels adjacent to a blue pixel.

6. Referring to claim 6, Langworthy discloses a spectrally dispersive element comprising dichroic mirrors arranged so that red and blue images are optically shifted to coincide geometrically at a point on the CCD image sensor (Col. 6, Lines 6 – 34).

7. Referring to claim 8, Langworthy discloses a method of optical processing by focusing an image upon a CCD with a spectrally dispersive element between the lens 10 and array 20 shown in figure 13 (Col. 6, Lines 6 – 34).

8. Referring to claim 9, Langworthy discloses a method of optically shifting red and blue images to coincide geometrically at on the sensor array as shown in figure 13 (Col. 6, Lines 6 – 34).

**(11) *Response to Arguments***

**A. With regard to claims 1 – 3, 5, 6, 8, and 9**

Applicants argue that the four dichroic mirrors 72, 74, 76, and 78 of figure 13 of Langworthy are not a single spectrally dispersive element as called for by all the claims.

In response to the arguments set forth by the applicants, the examiner first points out that nowhere in the claim language is there such language calling for a “single” spectrally dispersive

Art Unit: 2612

element. In fact, claim 1 is written with open language with the word “comprising” allowing for many spectrally dispersive elements to be disclosed by the prior art as long as there is at least one spectrally dispersive element to meet that particular limitation of claim 1. Therefore, even if the mirrors are separately considered an “element”, Langworthy still anticipates the claim.

Alternatively, the examiner maintains that the set of four dichroic mirrors 72 – 78 of Langworthy in figure 13 constitute a spectrally dispersive element. Column 6, line 12 of Langworthy refers to the set of four dichroic mirrors 72 – 78 as an “optical device” that shifts the red component of the white light relative to the green component and shifts the blue component of the image with respect to the red and green components. Therefore by the functionality described by Langworthy of dispersing red, blue, and green spectral components of the white light, and by the definition of Langworthy for the four mirrors to be an “optical device”, the examiner concludes that the four dichroic mirrors of Langworthy are indeed “a spectrally dispersive element” as claimed in claim 1 by the applicant.

Thus, whether “element” is interpreted as a single mirror or a collection of mirrors, the grounds of rejection remains the same, Langworthy anticipates claim 1 using either definition.

By the definition of the “spectrally dispersive element” of claim 1, provided on page 3 of the applicants’ original disclosure of the specification that defines the broadest interpretation of the “spectrally dispersive element” of claim 1 as, “disperses white light”. It is clear from the disclosure of Langworthy that the four dichroic mirrors 72 – 78 of figure 13 “disperse white light” output from the image taking lens. Even by subdividing the four dichroic mirrors into four separate “spectrally dispersive element”, even though the examiner maintains that the set of mirrors constitutes a “spectrally dispersive element”, each mirror “disperses white light” which

Art Unit: 2612

is the applicants definition provided in the original disclosure of the specification on page 3. For example, the dichroic mirror provided for the green light in figure 13 will disperse white light by separating the green spectral component and pass the red and blue spectral components to their corresponding dichroic mirrors.

Therefore, the prior art of Langworthy meets all limitations including the “spectrally dispersive element” of claims 1 – 3, 5, 6, 8, and 9.

B. With regard to claim 4

Applicants argue that Langworthy does not disclose an optical system configured to focus a line image of an optical point. Upon further consideration, the examiner agrees with the arguments set forth by the applicant that claim 4 is patentable over Langworthy.

The examiner requests the opportunity to present arguments at the oral hearing.

For the above reasons, it is believed that the rejections should be sustained.

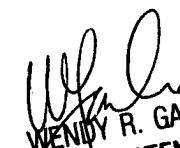
Respectfully submitted,



5/3/04

Matthew L Rosendale  
May 3, 2004

Conferees  
Wendy Garber  
Tuan Ho   
April 30, 2004



WENDY R. GARBER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600

FISH & RICHARDSON PC  
225 FRANKLIN ST  
BOSTON, MA 02110